

Claims

1. A method for protecting a civil aircraft from missiles with seeker heads of portable anti-aircraft missile complexes, the method comprising steps of: determining the fact of a missile launch; determining missile coordinates in every time moment; generating pulse periodic laser radiation, wherein a wavelength range of the laser radiation being within a sensitivity range of infrared seeker head, a power of the laser radiation exceeding the power of radiation of the aircraft engine in the sensitivity range of the infrared seeker head, and a pulse repetition frequency being close to typical operation frequencies of the infrared seeker heads; and sending the laser radiation to the point of presence of the missile in the given time moment.

2. The method according to Claim 1, further comprising steps of: calculating coordinates of missile launch place; transmitting an information on the fact of the missile launch and on the coordinates of missile launch place to the earth safety flight providing system and aircraft objective control system.

3. The method according to Claim 1, further comprising steps of: receiving the laser radiation reflected from the infrared seeker head; defining, by the power level of this reflected laser radiation, the fact that the aircraft is attacked by a missile with just the infrared seeker head; defining, on lowering the power level of this reflected laser radiation, the fact of failure of guiding the infrared seeker head to the aircraft; thereafter, terminating the generation of the laser radiation; and transmitting the information on the fact of failure of guiding the missile to the earth safety flight providing system and aircraft objective control system.

4. A system for protecting a civil aircraft from missiles with seeker heads of portable anti-aircraft missile complexes, the system comprising, on board the civil aircraft being protected: sensors of the fact and coordinates of missile launch; a transceiver having a turn drive and an optical channel which output is

connected to a sensor of missile coordinates at a missile flight trajectory; an on-board calculator; and a laser radiation generator having an actuation device; wherein the laser radiation generator being made of fluorine-hydrogen-deuterium type, the on-board calculator being configured to process signals from the sensors of the fact and coordinates of missile launch for calculating coordinates of a missile launch place and for providing a control signal to the turn drive of the transceiver in order for an optical channel of the transceiver to be directed to the launched missile, as well as to process signals from the sensor of missile coordinates at a missile flight trajectory for calculating missile coordinates in the given time moment and for providing an actuating signal to the actuation device of the laser radiation generator.

5. The system according to Claim 4, wherein the on-board calculator is configured to transmit the information on the fact of the missile launch and on the coordinates of missile launch place to the earth safety flight providing system and aircraft objective control system.

6. The system according to Claim 4, further comprising a reflected laser radiation receiver connected to an additional output of the optical channel of transceiver and intended for providing signals to the on-board calculator which is further configured to define, by the power level of this reflected laser radiation, the fact that the aircraft being attacked by a missile with just the infrared seeker head, and to define, on lowering the power level of this reflected laser radiation, the fact of failure of guiding the infrared seeker head to the aircraft; to provide to the actuation device of the laser radiation generator an actuating signal which terminates the generation of the laser radiation, and to transmit the information on the fact of failure of guiding the missile to the earth safety flight providing system and aircraft objective control system.

7. The system according to Claim 4, wherein the sensors of the fact and coordinates of missile launch are sensors of the ultraviolet range.

8. The system according to Claim 4, wherein the sensor of missile coordinates at a missile flight trajectory is a narrow-directed sensor of the ultraviolet range.

9. The system according to Claim 4, wherein the optical channel of the transceiver is further intended to transmit the radiation of the laser radiation generator towards the launched missile.